APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,517	06/23/2003	Koen Deforche	TRA-EAS-007	9668

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EXAMINER
SHAH, CHIRAG G

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
08/31/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/601,517	DEFORCHE, KOEN
	Examiner	Art Unit
	Chirag G. Shah	2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2007*.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *13 and 14* is/are allowed.

6)☒ Claim(s) *5,9 and 12* is/are rejected.

7)☒ Claim(s) *1-4, 6-8 and 10-12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed 6/15/07 have been fully considered but they are not

persuasive.

2.   Applicant argues that Bensaou does not teach the nominal service-interval of claim 6 and

claim 6 is not rendered obvious over Ko in view of Bensaou. Examiner respectfully disagrees

and redirects Applicant to Bensaou reference specifically to col. 16 lines 61 to col. 17, lines 11.

In the respective section, Bensaou clearly suggests that there are service group sessions based on

priority. The highest priority corresponds to urgent real time calls, high priority corresponds to

non –real time cells and lowest corresponds to non-urgent real-time cells and low priority non

real time cells. Thus, the highest real-time session is served until the non-urgent real-time cells

urgency parameter exceeds a predefined threshold level and then the non-urgent real-time cells

are promoted from the lowest priority group to the highest. The link to combine the two

references is that the virtual time of each session is based on priority and once one of the sessions

exceeds its predefined threshold then the priority shifts to a different session. This is a QoS

incentive that guarantees fairness in the latency, cell due date or virtual times of transferring

data.

3.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the .
> manner in which the invention was made.

5.   Claim 1-4, 6-8, and 10-11 and rejected under 35 U.S.C. 103(a) as being unpatentable

over Ko et al. (US 2004/0114602), hereinafter Ko in view of Bensaou et al. (US 6,747,976),

hereinafter Bensaou.

    Regarding claims 1 and 6, a packet scheduling method and an apparatus [packet

scheduler 12, see fig. 2 and claim 1] and, comprising:

an input device **[traffic classifier 11, see fig. 2]** for receiving incoming data packets

belonging to at least one session **[see claim 1, lines 2-3, classifies traffic input for each

session]**, a bank of memories **[packet queues, see fig. 2]** comprising memory sets for storing the

incoming data packets **[see claim 1, lines 12-13]**, the memory queues **[packet queues, see fig. 2]**

sets having a nominal service-interval in which time a data packet is to be transmitted, the

nominal service-interval of one memory set being faster than the nominal service-interval of

another memory set **[where a central management unit manages and sets a predetermined**

speed for each session and a virtual time of a system, one session queue may have a

predetermined speed greater than other based on priority, see claim 1 and paragraph 0032-

0035],

an output device for transmitting the stored data packets **[packet transmission unit, 17,**

see fig. 2]

a processing element linked **[management unit 14, see fig. 2]** to the input device

[classifier 11, see fig. 2], the output device **[transmission unit 12, see fig. 2]** and the bank of

memories **[queues 16, see fig. 2]** for scheduling sessions **[scheduling sessions, see claim 1 and**

fig. 2].

Ko discloses in paragraphs 0036-0041 of adjusting the virtual start time for the current

packet. Ko fails to explicitly disclose of the queues of the sessions for being serviced until the

nominal service-interval of any of the memory sets where there is at least one data packet to be

sent, is exceeded.

Bensaou teaches in fig. 6 of scheduling based on priority. Bensaou discloses in col. 16,

lines 24-27 of incoming packets into traffic classes as real-time group and non-realtime group.

Bensaou further discloses in table A in col. 6 and in col. 16, lines 61-65 of setting priority levels.

Bensaou discloses in col. 17, lines 8-11 that non-urgent real-time cells are promoted from the

lowest priority group to highest priority group when the cells' urgency parameter exceeds a pre-

defined threshold, suggesting that if the nominal service-interval of a service group is exceeded,

then its priority for a next selection is changed/promoted to a higher priority. In addition, col. 16

lines 61 to col. 17, lines 11, clearly suggest that there are service group sessions based on

priority. The highest priority corresponds to urgent real time calls, high priority corresponds to

non –real time cells and lowest corresponds to non-urgent real-time cells and low priority non

real time cells. Thus, the highest real-time session is served until the non-urgent real-time cells

urgency parameter exceeds a predefined threshold level and then the non-urgent real-time cells

are promoted from the lowest priority group to the highest. Therefore, it would have been

obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of

Ko to include promoting lower priority session to a higher priority for next selection when the

urgency parameter exceeds the predefined threshold as taught by Bensaou. One is motivated as

such in order to guarantee fairness in the sense of bandwidth assuring QoS bounds, accurate per-

cell information, such as cell due date, or virtual times.

Regarding claims 2 and 7, Ko fails to explicitly disclose each data packet having a

priority for selection, the method further comprising: if the nominal service-interval of a service-

group is exceeded and if a data packet from that service-group is not selected, then its priority for

a next selection is changed such as to give it a higher priority [Bensaou teaches in fig. 6 of

scheduling based on priority. Bensaou discloses in col. 16, lines 24-27 of incoming packets into

traffic classes as real-time group and non-realtime group. Bensaou further discloses in table A in

col. 6 and in col. 16, lines 61-65 of setting priority levels. Bensaou discloses in col. 17, lines 8-

11 that non-urgent real-time cells are promoted from the lowest priority group to highest priority

group when the cells' urgency parameter exceeds a pre-defined threshold, suggesting that if the

nominal service-interval of a service group is exceeded, then its priority for a next selection is

changed/promoted to a higher priority]. Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention to modify the teachings of Ko to include promoting lower priority session to a higher priority for next selection when the urgency parameter exceeds the predefined threshold as taught by Bensaou. One is motivated as such in order to guarantee fairness in the sense of bandwidth assuring QoS bounds, accurate per-cell information, such as cell due date, or virtual times.

Regarding claims 3, 8 and 11, Ko discloses wherein: the service-interval is measured in accordance with virtual time [Virtual finish time calculation unit, see fig. 2 and paragraphs 0036-0041], which virtual time is incremented in accordance with the time expected for transmission of the next packet to be sent [the virtual time for the next packet is adjusted/incremented/updated based on virtual start time and finish time calculated for the new packet, see paragraph 0036-0041].

Regarding claims 4 and 10, Ko discloses wherein: the service-interval is measured in accordance with virtual time [Virtual finish time calculation unit, see fig. 2 and paragraphs 0036-0041], which virtual time is incremented in accordance with the time for transmission of the latest packet sent [based on the length of the previous packet, the virtual start time and finish time for the current packet are calculated, see paragraph 0036-0041].

Allowable Subject Matter

6.   Claims 5, 9 and 12 objected to as being dependent upon a rejected base claim, but would

be allowable if rewritten in independent form including all of the limitations of the base claim

and any intervening claims.

7.   Claims 13-14 allowed

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Chirag G. Shah whose telephone number is 571-272-3144. The

examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Patel Jay can be reached on 571-272-2988. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

cgs
March 8, 2007

CHIRAG G. SHAH
PRIMARY PATENT EXAMINER
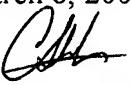
Chirag G. Shah, Primary Examiner 2616